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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/631,353	08/02/2000	Timothy J. Mousley	GB 000003	9152
24737	7590	12/04/2003	EXAMINER	
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			2665	

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6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/631,353

Applicant(s)

MOULSLEY ET AL.

Examiner

Lawrence Baranyai

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 02 August 2000.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-16 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9, 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Esmailzadeh (US 6,111,869). Esmailzadeh, in the field of communication, discloses a system for efficient communication of data between a base station and mobile terminals.
3. Regarding claims 1 and 2, Esmailzadeh discloses in Fig. 1, mobile terminals in 110 to 112, which intend to transmit data packets, transmit orthogonal codes (i.e., secondary station with first signature) as requests for transmission 120-122 to the base station 100 to let the base station 100 (i.e., primary station) know that data packets that are to be transmitted are present in the mobile terminals 110 to 112. The base station 100 that has received the requests for transmission 120-122 from the mobile terminals 110 to 112 forms transmission schedules 130 to 132 by determining time slots and data channels used by the mobile terminals 110 to 112, and sends these formed transmission schedules 130 to 132 to the mobile terminals 110 to 112 (i.e., primary station responses to the request). The mobile terminals 110 to 112 that have received transmission schedules 130 to 132 from the base station 100 transmit data packets according to the time slots and data channels indicated by the

Art Unit: 2665

transmission schedules 130 to 132 that are received (col. 8 line 56 - col. 9 line 4) in the alert response to the mobile terminals or mobile terminal retries as shown in Fig. 11 1104 (i.e., secondary station re-transmits a request encoded with a second signature).

FIG. 9 illustrates a response of transmission schedule in the mobile communication apparatus of the present invention. As shown in FIG. 9, the transmission schedule which is a response in the mobile transmission apparatus of this embodiment includes the address 901 of the transmitting source, orthogonal code numbers 902, time slots 903 and data channel numbers 904. The transmission schedule is the one when the address 901 of the transmitting source representing the address of the base station 100, orthogonal code number 902 which is the data representing the detected orthogonal code, time slot 903 by which the mobile terminal transmits data packets, and data channel number 904 by which the mobile terminal transmits data packets, responded to by the mobile terminals 110 to 112 by using the ACK/NACK or alert response channel (col. 14 lines 11-25).

The process to support the mobile station operation is found in Fig. 11 and described in col. 14 lines 51 – col. 15 line 42. It includes sending of request signals 1102, awaiting a response 1103 from the base station, retrying if no response is received from the base station 1104, if a response is received, transmitting data packets according to the schedule received in the response from the base station 1105, retransmitting if NACK is received from the base

Art Unit: 2665

station 1106 and completing the process if ACK is received from the base station 1106.

The process to support the base station operation is found in Fig. 12 and col. 15 line 44 – col. 16 line 42. Requests are received from mobile stations 1201, results of processing requests are transmitted back in alert response to the mobile stations 1203 with scheduling information (channel no. time slot, etc. as previously noted), data packets are received from mobile stations and processed 1206 and if successful, ACK is transmitted to the mobile station 1208 or, NACK is transmitted and data transmission rescheduled 1207. Hence base station transmits further responses to alert requests from mobile stations (i.e. contention resolution signal responses) and selects a random access channel for which the mobile station has been granted access and transmits a channel allocation with the alert response.

This can be seen as equivalent to providing a radio communication system having a random access channel for the transmission of data from a secondary station to a primary station, the secondary station having means for requesting access to a random access channel resource by transmitting a signal encoded with a first signature corresponding to the resource, the primary station having means for transmitting a response to the request, the secondary station having means for subsequently transmitting a contention resolution signal encoded with a second signature, and the primary station having means for transmitting a further response to the contention resolution signal, for selecting a random access channel to which the secondary station will be granted access, and for

Art Unit: 2665

transmitting a channel allocation signal identifying this channel at the same time as at least one of the responses. Hence the requisite elements of claim 1 are satisfied. This can also be seen as equivalent to providing a system, which in addition to the above, is characterized in that the random access channel is adapted for transmission of data in packets as recited in claim 2.

4. Regarding claims 3-5 and 7, Esmailzadeh discloses a base station (i.e., primary station), with features as noted above for claims 1 and 2. This is equivalent to providing a primary station for use in a radio communication system having a random access channel for the transmission of data from a secondary station to the primary station, wherein means are provided for transmitting a response to a request from the secondary station for access to a random access channel resource, the request comprising transmission of a signal encoded with a first signature, for transmitting a further response to a subsequent contention resolution signal encoded with a second signature transmitted by the secondary station, for selecting a random access channel to which the secondary station will be granted access, and for transmitting a channel allocation signal identifying this channel at the same time as at least one of the responses. In addition, it is equivalent to providing a means for transmitting a further response to a further contention resolution signal transmitted by the secondary station, for transmitting the channel allocation signal at the same time as each of the responses, for subdividing the channel allocation signal into a plurality of portions, and for transmitting each of the portions at the same time as a respective one of the

Art Unit: 2665

responses and, for including the channel allocation signal as part of each response.

5. Regarding claim 9, Esmailzadeh discloses a mobile station (i.e., secondary station), with features as noted above. This is equivalent to providing a secondary station for use in a radio communication system having a random access channel for the transmission of data to a primary station, wherein means are provided for requesting access to a random access channel resource by transmitting a signal encoded with a first signature corresponding to the resource, for receiving a response from the primary station and subsequently transmitting a contention resolution signal encoded with a second signature, for receiving a further response from the primary station, and for determining which channel has been allocated from a channel allocation signal transmitted by the primary station at the same time as at least one of the responses.

6. Regarding claims 6 and 14, Esmailzadeh discloses a method and apparatus for the base station, which includes subdividing the channel allocation signal into a plurality of time slots and transmitting this information at the same time as the response (col. 14 lines 10-17). This can be seen as equivalent to providing a means for subdividing the channel allocation signal into a plurality of portions, and for transmitting each of the portions at the same time as a respective one of the responses.

7. Regarding claims 11-13 and 15, Esmailzadeh discloses a method for a mobile radio communication system that includes the features described above for claims 1 and 2. This can be seen as providing a method of operating a radio

Art Unit: 2665

communication system having a random access channel for the transmission of data from a secondary station to a primary station, the method comprising the secondary station requesting access to a random access channel resource by transmitting a signal encoded with a first signature corresponding to the resource, the primary station transmitting a response to the request, the secondary station subsequently transmitting a contention resolution signal encoded with a second signature, and the primary station transmitting a further response to the contention resolution signal, selecting a random access channel to which the secondary station will be granted access, and transmitting a channel allocation signal identifying this channel at the same time as at least one of the responses. Additionally, it provides a method characterized by a secondary station transmitting a further contention resolution signal and the primary station transmitting a further response, a primary station transmitting the channel allocation signal at the same time as each of the responses and, a primary station including the allocation signaling as part of each response.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esmailzadeh as applied to claims 1-7, 9, 11-15 above, and

Art Unit: 2665

further in view of Gustafsson et al. (US 6,643,275). Esmailzadeh teaches a method and apparatus for efficiently managing the random access channel of a radio communication system which includes a response message to mobile stations acknowledging receipt of their requests and allocating channels and times slots for data transmission.

Esmailzadeh does not disclose the means and method to transmit a channel status message indicating the highest data rate available and the use of the status message as a check before transmission. Gustafsson et al., in the field of communications discloses a method and apparatus for wireless communication in which the base station broadcasts a predetermined number of signatures to be assigned to a certain data rate such that the base station can adapt the combination of signatures and data rate to the actual conditions of the traffic request being made by the mobile stations (col. 7 line 65 – col. 8 line 2).

These features can be seen as equivalent to providing means and method of transmitting a random access channel status message indicating the highest data rate available on the random access channel and can be used as a check before initial transmission of data as indicated in the claims 8, 10 and 16.

These features have the advantage, as noted by Gustafsson et al., of providing a means to adapt the allocated data rate to the needs of the mobile stations increasing system throughput and efficiency. It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Gustafsson et al., to apply the broadcast status message assigning signatures to certain data rates of Gustafsson et al., to the random access

Art Unit: 2665

channel methods of Esmailzadeh with the motivation to arrive at a system which increases network throughput and efficiency as set forth in the claims.

Citation of Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Esmailzadeh (US 6,259,724) discloses a system for random access control, which includes data with the preamble and notifies stations of specific codes to use or not to use to reduce contention. Esmailzadeh et al. (US 6,163,533) discloses a technique of random channel access for variable rate packet data. Chuah et al. (US 6,594,240 and US 6,400,695) discloses random access channel contention resolution based on random back off re-try methods. Kim et al. (GB 2,346,779) discloses a random access control method for variable length messages, the use of a broadcast channel to report the outcome of acquisition, and packet data transmission on the random or dedicated channel.

Examiner Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Baranyai whose telephone number is (703) 305-8707. The examiner can normally be reached on Monday-Thursday: 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax


Art Unit: 2665

phone number for the organization where this application or proceeding is assigned is (703) 308-9051.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

Lawrence Baranyai
Examiner
Art Unit 2665

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